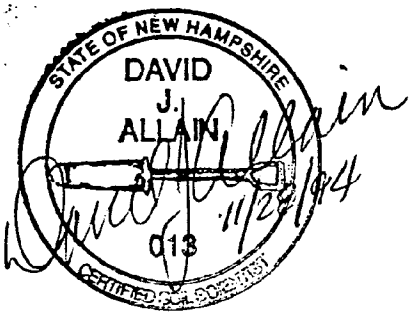
Attachment 94.7.2.1(6)

TIDAL WATER SITE ASSESSMENT

ORDER ONE SOIL SURVEYS

for

SELECTED SEABROOK, NEW HAMPSHIRE PROPERTIES



Prepared by David J. Allain, C.S.S. #13

Elkind Environmental Associates, Inc.
6 Baymeadow Drive
Nashua NH 03063

NOVEMBER 1994

A report of the New Hampshire Coastal Program, Office of State Planning, pursuant to National Oceanic and Atmospheric Administration Award No. NA470ZO237. The views expressed herein are those of the Office of State Planning and do not necessarily reflect the views of NOAA or any of its sub-agencies.

NH Coastal Program

TABLE of CONTENTS

INTRODUCTION

Order One Soil Surveys were conducted on selected Town of Seabrook properties in conjunction with developing a Tidal Waters Assessment Form and ground water studies to be performed by the University of New Hampshire's Jackson Laboratory.

FIELD PROCEDURES

The surveys were done by David J. Allain, New Hampshire Certified Soil Scientist #13, in accordance with Order One Soil Mapping Standards for New Hampshire, SSSNNE Publication #2.

Excavating equipment was not used to dig on site because of the size and developed nature of all sites and the need to minimize surface disturbance. Tile spade and auger holes were used to examine soil profiles to a depth of 40+ inches. Road cuts, trenches, septic system test pit data, professional observation and judgement were used to supplement the on site data and provide for a combined observation depth of 60+/- inches.

Observations were made in sufficient numbers and locations to justify the soil units noted.

The parcels mapped were mostly residential sites ranging in size from 1/4 acre to 1 acre. The school site represented a non-residential application and the area mapped in detail included about 18 acres.

Buildings, roads and appropriate property bounds were located by theodolite, then plotted and used for horizontal control on each site.

Slopes were determined using vertical data obtained on each site by theodolite.

Only the soils within the assumed property boundaries for the selected sites have been examined and any noted soil unit is contained within the property boundaries.

All field work was performed during the month of October 1994.

SOIL IDENTIFICATION

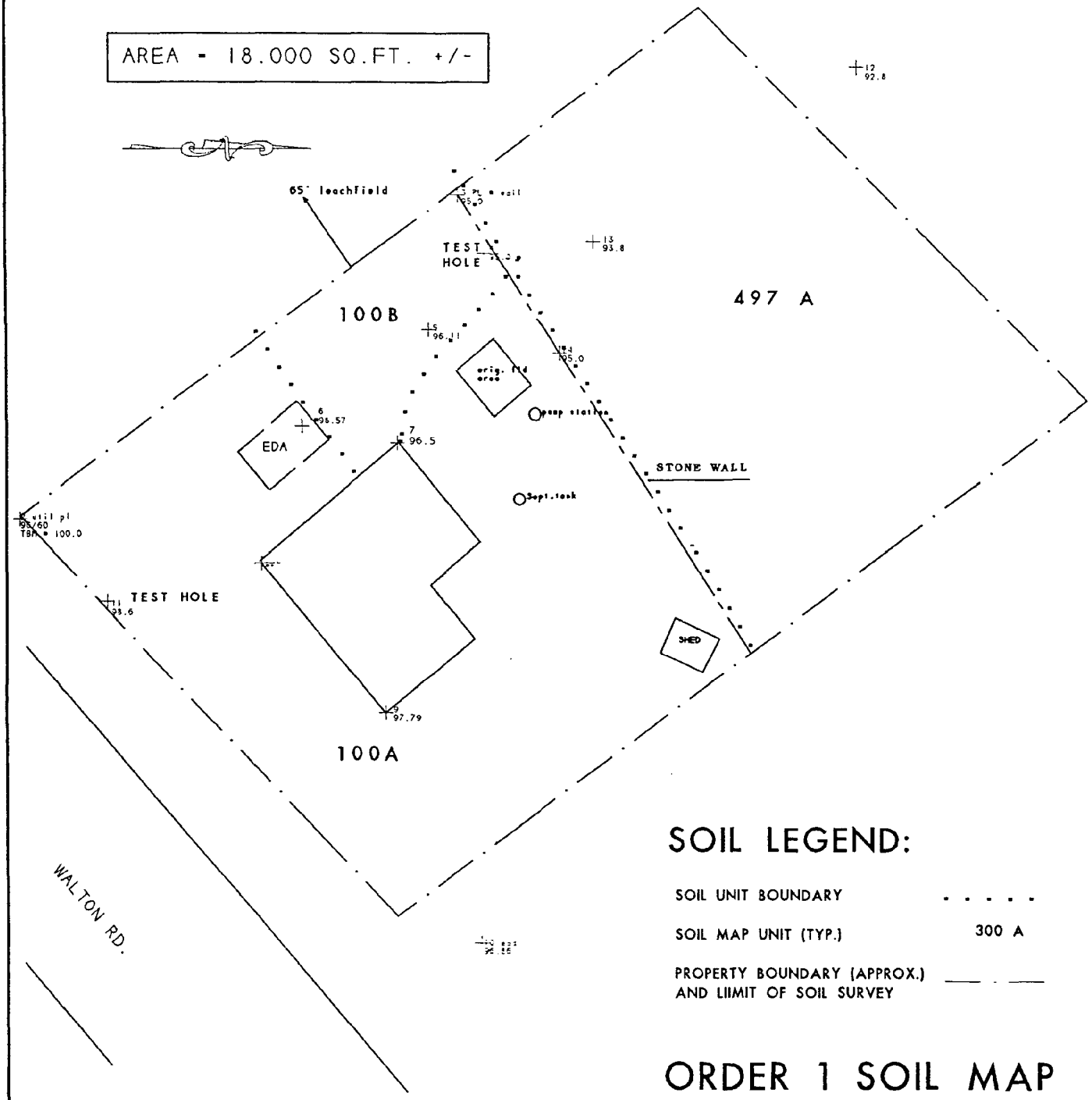
LEGEND

MAP SYMBOL	SOIL NAME
26 A	Windsor, loamy sand, 0-3% slopes
100 A	Udorthents, wet substratum, 0-3% slopes
100 B	Udorthents, wet substratum, 3-8% slopes
140 A	Chatfield-Hollis-Canton Comples, 0-3% slopes
140 C	Chatfield-Hollis-Canton Complex, 8-15% slopes
299 A	Udorthents, smoothed, 0-3% slopes
299 B	Udorthents, smoothed, 3-8% slopes
299 D	Udorthents, smoothed, 15-25% slopes
299 E	Udorthents, smoothed, 25-35% slopes
300 A	Udipsamments, nearly level, 0-3% slopes
300 C	Udipsamments, nearly level, 8-15% slopes
313 A	Deerfield, loamy sand, 0-3% slopes
313 C	Deerfield, loamy sand, 8-15% slopes
497 A	Paucatuck, mucky peat, 0-3% slopes
546 B	Walpole, sandy loam, 3-8% slopes
797 A	Matunuck, 0-3% slopes
915 C	Unnamed Aquic Udipsamment, 8-15% slopes

CLASSIFICATION of SOILS

LEGEND

SOIL NAME	TAXONOMIC CLASS
Windsor	Mixed, mesic, Typic Udipsamments
Udorthents, wet substratum	Aquic Udorthents
Udorthents, smoothed	Typic Udorthents
Chatfield	Coarse, loamy, mixed, mesic, Typic Dystrochrepts
Hollis	Loamy, mixed, mesic, Lithic Dystrochrepts
Canton	Coarse, loamy over sandy or sandy skeletal, mixed, mesic, Typic Dystrochrepts
Udipsamments, nearly level	Typic Udipsamments
Deerfield	Mixed, mesic, Aquic Udipsamments
Paucatuck	Sandy or sandy skeletal, mixed, euic, mesic, Terric Sulfihemists
Walpole	Sandy, mixed, mesic, Aeric Haplaquepts
Matunuck	Sandy, mixed, mesic, Typic Sulfaquents
Unnamed Aquic Udipsamment	Mixed, mesic, Aquic Udipsamment



SCALE 1" = 30'

SOIL LEGEND:

SOIL UNIT BOUNDARY	. . . . .
SOIL MAP UNIT (TYP.)	300 A
PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY	___ . ___

ORDER 1 SOIL MAP

OWNER: HUBERT, J. & A.
MAP# 13 LOT# 46C
ADDRESS: 279 WALTON RD.

OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357

ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 279 Walton Road

100 A, Udorthents, wet substratum, 0-3% slope

This map unit represents an area of poorly drained soils that have been filled for residential use. Most of this fill has been in place for about 30 years and appears to be moderately well drained on the Walton Road side of the residence to somewhat poorly drained to the rear of the residence.

Typically, this unit was found to have 5 to 16 inches (") of dark brown to very dark brown sandy loam fill over 7 to 11 inches of brown to yellowish brown sandy fill. This 12 to 27 inches of fill has been placed over very dark gray to black sandy loam. Ground water was noted just below the bottom of the fill.

The area examined within this unit at 279 Walton Road is about 1/4 acre in size. It contains the dwelling and effluent disposal area, but they are not included within the unit described.

100 B, Udorthents, wet substratum, 3-8% slope

This unit has the same description as the 100 A unit. Slope is the main difference.

The unit occupies about 1500 square feet of the 279 Walton Road lot and is the fill slope from the effluent disposal area to the Pawcatuck soils.

497 A, Pawcatuck, mucky peat, 0-3% slope

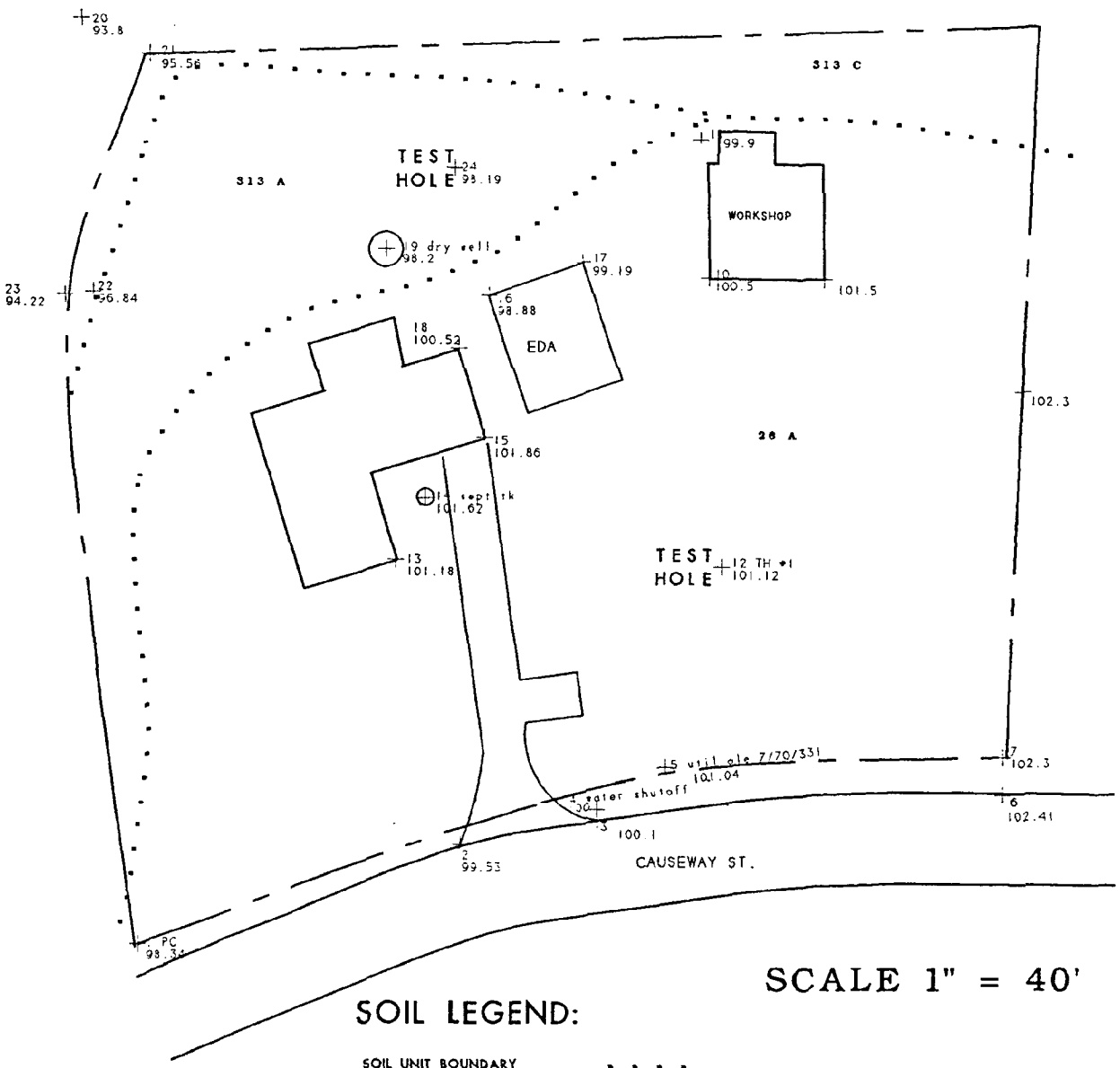
This very poorly drained organic soil occupies the upper fringe of the tidal marsh.

Typically found was an Oe horizon of 20 to 30 inches in depth having a very dark gray to black matrix color and containing mucky peat composed of mostly herbaceous fibers in varying stages of decomposition. A small percentage of silt was noted.

Below the Oe horizon was dark gray sand to loamy sand. Profiles examined were saturated to the surface.

The soils within this unit comprised about 6000 square feet of the lot.

AREA = 40,000 SQ.FT. +/-



SCALE 1" = 40'

SOIL LEGEND:

SOIL UNIT BOUNDARY	. . . .
SOIL MAP UNIT (TYP.)	300 A
PROPERTY BOUNDARY (APPROX.) AND LIMIT OF SOIL SURVEY	— . —

ORDER 1 SOIL MAP

OWNER: LOCKE, E.
MAP# 13 LOT# 70
ADDRESS: 41 CAUSEWAY ST.
OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357

ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 41 Causeway Street

26 A, Windsor, loamy sands, 0-3% slope

The soils within this unit are deep excessively drained soils formed in glaciofluvial deposits.

The profiles examined within this unit typically had an A horizon of 6 to 12 inches of very dark brown sandy loam. The B horizon of 18 to 24 inches in thickness consisted of dark brown to dark yellowish brown loamy sand. The C horizon consisted of yellowish brown loamy sand to a depth of 40"+.

The area of the home and effluent disposal area are not part of this unit.

313 A, Deerfield, loamy sand, 0-3% slope

This unit consists of moderately well drained soils formed in glaciofluvial deposits.

The typical profile had an 8 to 12" A horizon of very dark grayish brown to dark brown sandy loam over a brownish yellow to dark yellowish brown loamy sands B horizon extending to 36 inches from the surface. Very dark grayish brown mottling was noted as shallow as 30 inches in profiles examined. The C horizons observed extended below 36 inches and were pale brown fine sands with very dark grayish brown mottles noted.

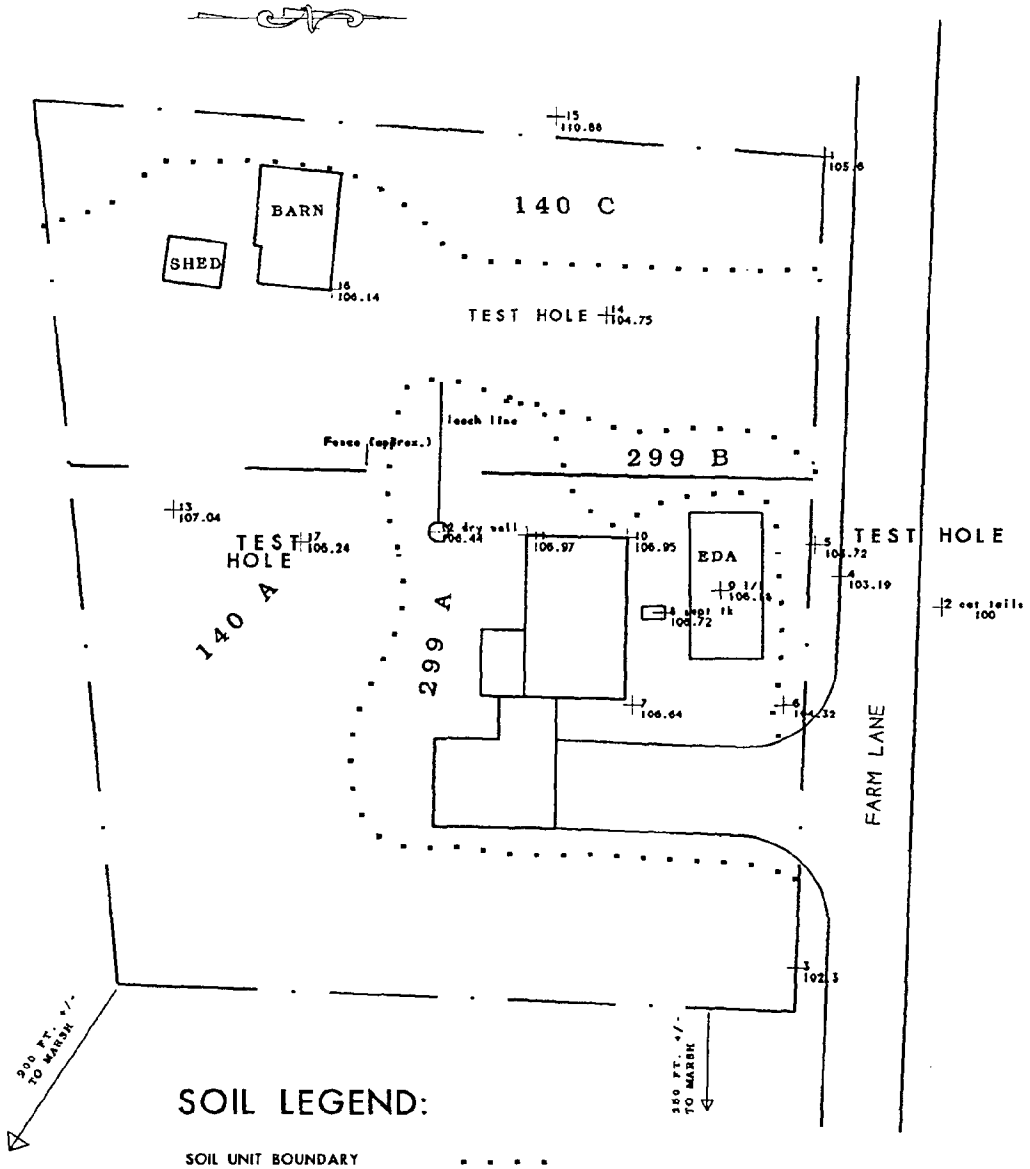
Less than 10% of B sloped Deerfield soils are included within this unit.

313 C, Deerfield, loamy sand, 8-15% slope

The description of this unit is the same as 313 A with the exception of slope.

This unit contains less than 10% of steeper sloped Deerfield soils.

AREA = 40,400 SQ.FT. +/-



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY — . —

ORDER 1 SOIL MAP

OWNER: LOCKE, R.

MAP# 13 LOT# 84

ADDRESS: 138 FARM LANE

OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

SCALE 1" = 50'

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.

EEA

6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357

ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 138 Farm Lane

299 A, Udorthents, smoothed, 0-3% slope

This unit represents an area that has been excavated, regraded and filled to provide for a homesite and effluent disposal area. The home and effluent disposal area are located within this unit, but are not part of it.

Horizon development was not noted within the loamy profiles examined. No redoximorphic features were noted within 20 inches, and the fill appeared to be at least moderately well drained.

299 B, Udorthents, smoothed

This unit is the same as 299 A, with the exception of slope.

140 A, Chatfield-Hollis-Canton Complex

This unit consists of well drained Chatfield soil, excessively drained Hollis soil and well drained Canton soil. These soils occur in a random manner too intricate to separate them into singular units.

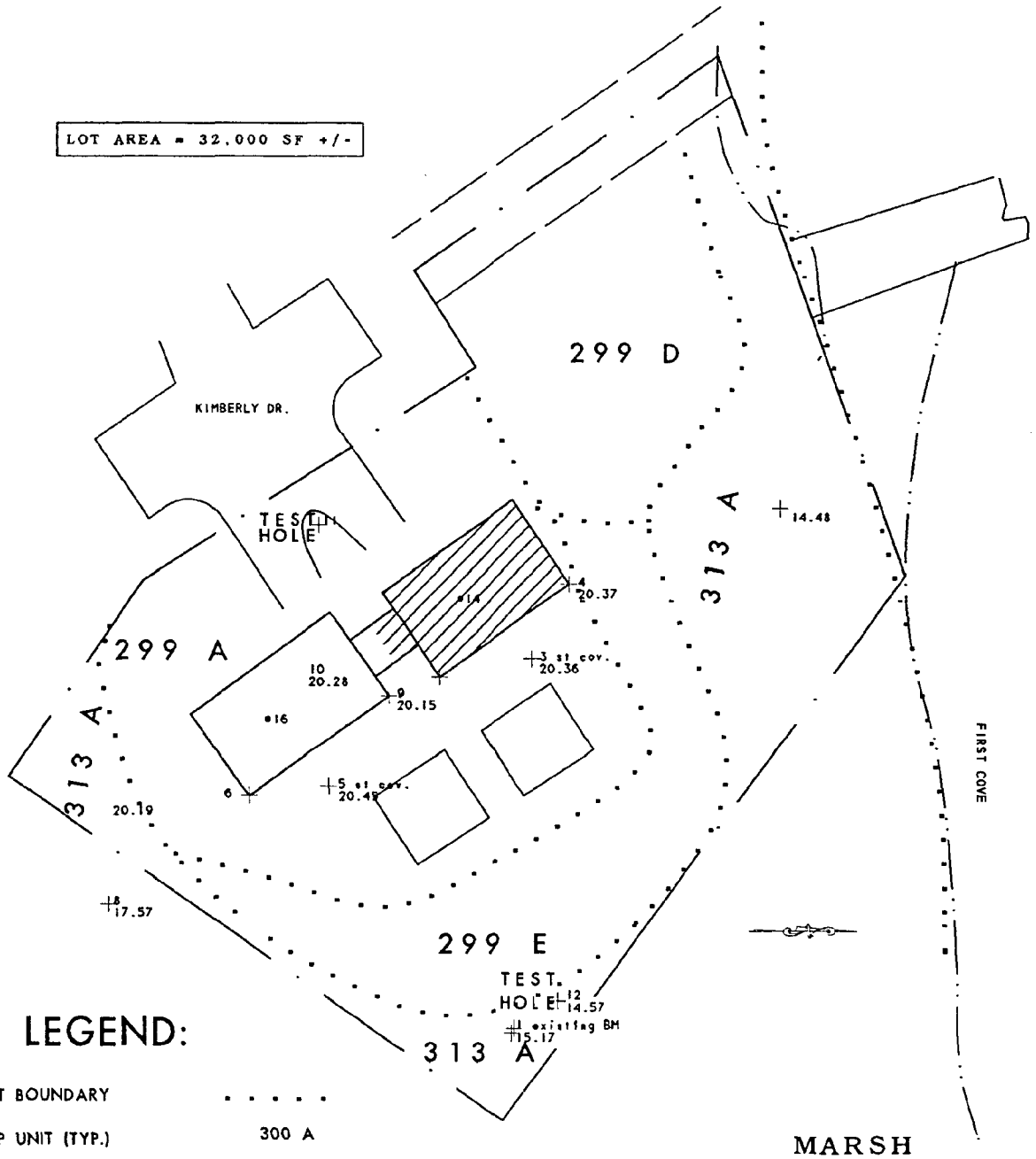
The Hollis soil observed was shallow to bedrock (10 to 20") and consisted of loamy glacial till. This soil is about 25% of the unit.

The Chatfield soil is glacial till similar to Hollis soil, except that bedrock occurs between 20 and 40 inches. This soil unit makes up about 35% of the unit.

The Canton soil is a deep well drained coarse loamy over sand glacial till. This soil comprises about 25% of the unit.

Rock outcroppings were noted near the property lines and make up less than 5% of the unit.

Steeper than 0-3% slopes occur near the stone wall to the rear of the property and make up less than 5% of the unit.



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY —— . ——

ORDER 1 SOIL MAP

SCALE 1" = 50'

OWNER: BAKUTIS, M
MAP# 12 LOT# 29-50
ADDRESS 14 KIMBERLY DR.
OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357
ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 14 Kimberly Drive

313 A. Deerfield

Soils work, done by N.H. Soil Consultants of Newmarket in conjunction with subdivision and septic system approval for this lot, shows that the soils on much of this lot were consistent with the Deerfield Series before a majority of the lot was filled for home and septic system.

The soils before development , and still observed within the 313 A unit noted, are moderately well drained soils formed in glaciofluvial deposits.

Typically observed was 3 to 5 inches of dark brown fine sandy loam over yellowish brown sandy loam to a depth of about 28 inches. Below 28 inches were brownish yellow to brown sands with mottling observed.

The soils comprise about 1/4 of this 1+/- acre lot. Within this unit are steep banks, and shallow amounts of fill cover less that 10% of this unit.

299 A, Udorthents, smoothed

This unit appears to be a well drained area filled for septic system and home placement. The fill appears loamy.

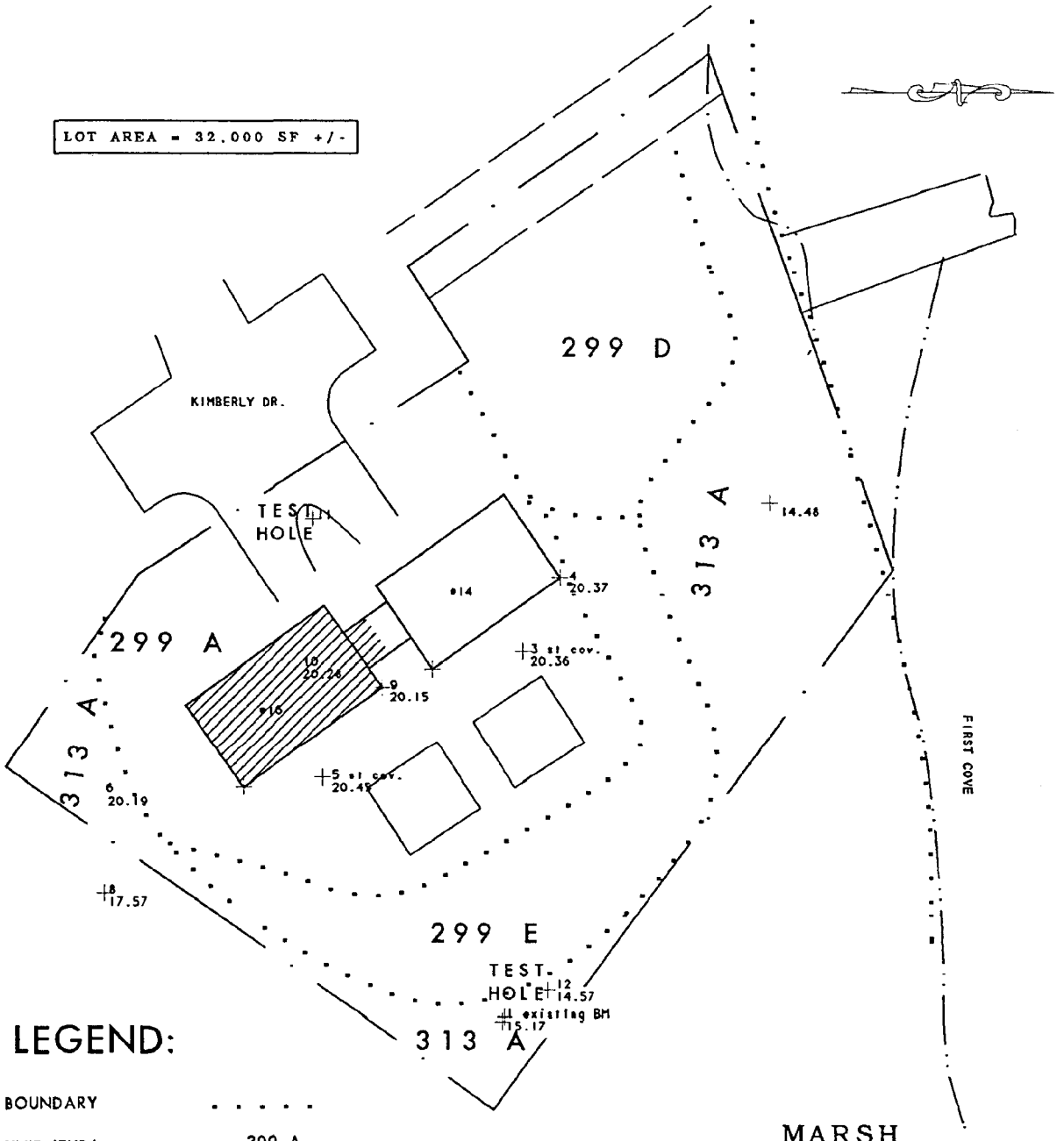
This unit covers about 17,000 square feet and contains the homes and effluent disposal areas which are not part of this unit.

299 D, Udorthents, smoothed

This area is adjacent to the 299 A unit and shares the same description, except that the slope is between 15 to 25%. It is about 6400 square feet in size.

299 E, Udorthents, smoothed

This unit also shares the same description as 299 A, except that it has a slope of between 25 and 35%. This unit is the fill slope for the effluent disposal area and covers about 5000 square feet.



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY ___ . ___

PREPARED BY :
DAVID J. ALLAIN, CSS #13

SCALE 1" = 50'

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ORDER 1 SOIL MAP

OWNER: CHASE, F&H
MAP# 12 LOT# 29-5
ADDRESS 16 KIMBERLY DR.
OCTOBER, 1994

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357
ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 16 Kimberly Drive

313 A, Deerfield

Soils work, done by N.H. Soil Consultants of Newmarket in conjunction with subdivision and septic system approval for this lot, shows that the soils on much of this lot were consistent with the Deerfield Series before a majority of the lot was filled for home and septic system.

The soils before development , and still observed within the 313 A unit noted, are moderately well drained soils formed in glaciofluvial deposits.

Typically observed was 3 to 5 inches of dark brown fine sandy loam over yellowish brown sandy loam to a depth of about 28 inches. Below 28 inches were brownish yellow to brown sands with mottling observed.

The soils comprise about 1/4 of this 1+/- acre lot. Within this unit are steep banks, and shallow amounts of fill cover less that 10% of this unit.

299 A, Udorthents, smoothed

This unit appears to be a well drained area filled for septic system and home placement. The fill appears loamy.

This unit covers about 17,000 square feet and contains the homes and effluent disposal areas which are not part of this unit.

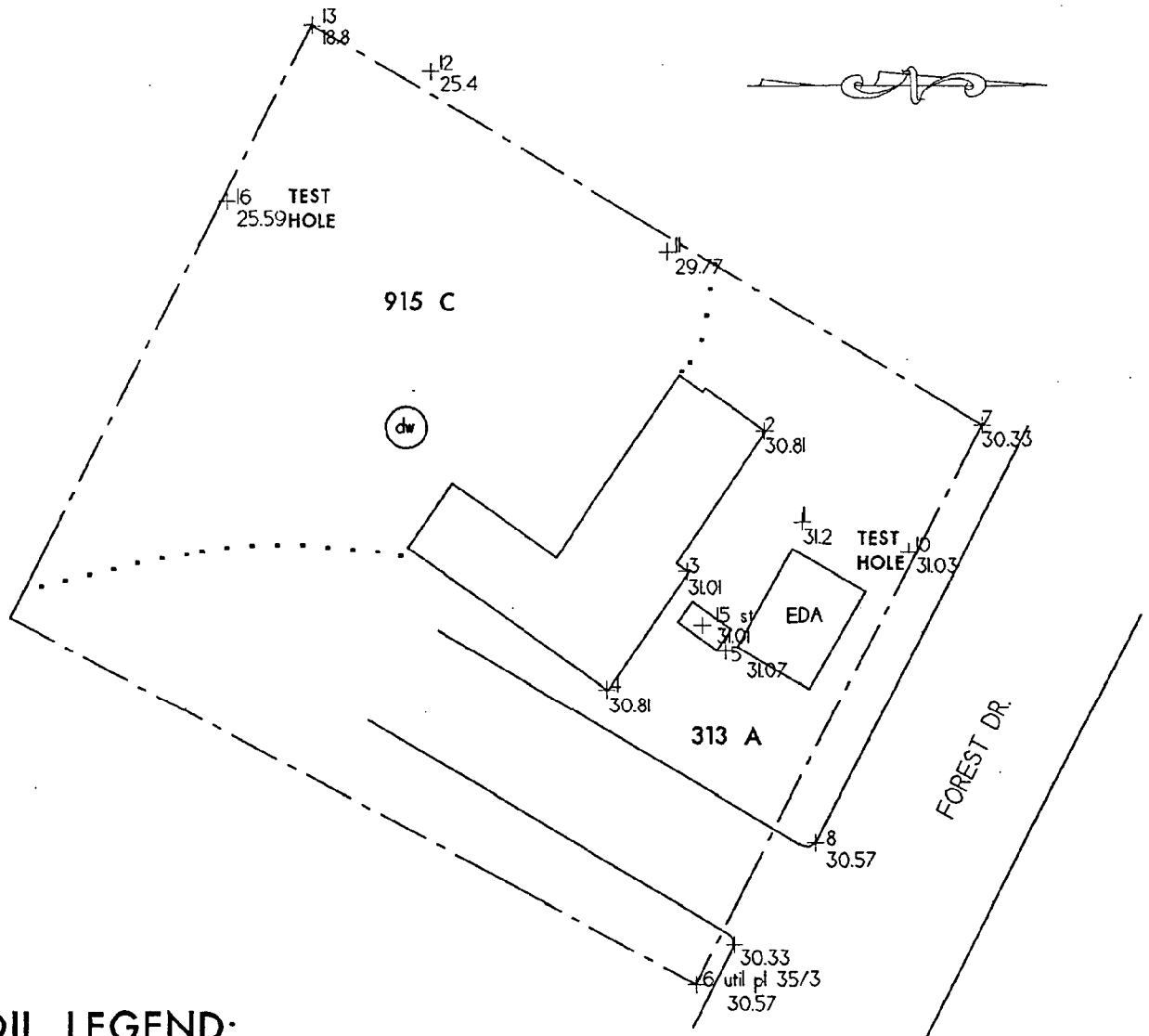
299 D, Udorthents, smoothed

This area is adjacent to the 299 A unit and shares the same description, except that the slope is between 15 to 25%. It is about 6400 square feet in size.

299 E, Udorthents, smoothed

This unit also shares the same description as 299 A, except that it has a slope of between 25 and 35%. This unit is the fill slope for the effluent disposal area and covers about 5000 square feet.

AREA = 13,900 SQ.FT. +/-



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIMIT OF SOIL SURVEY ___ . ___

SCALE 1" = 30'

ORDER 1 SOIL MAP

OWNER: CRONIN, P.
MAP# 9 LOT# 141
ADDRESS: 6 FOREST DR.
OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

ELKIND ENVIRONMENTAL ASSOCIATES, INC.

EEA

6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357

ENGINEERING PERMITTING CONSULTING

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

MAP UNIT DESCRIPTIONS for 6 Forest Drive

313 A, Deerfield

These soils were formed in moderately well drained glaciofluvial deposits.

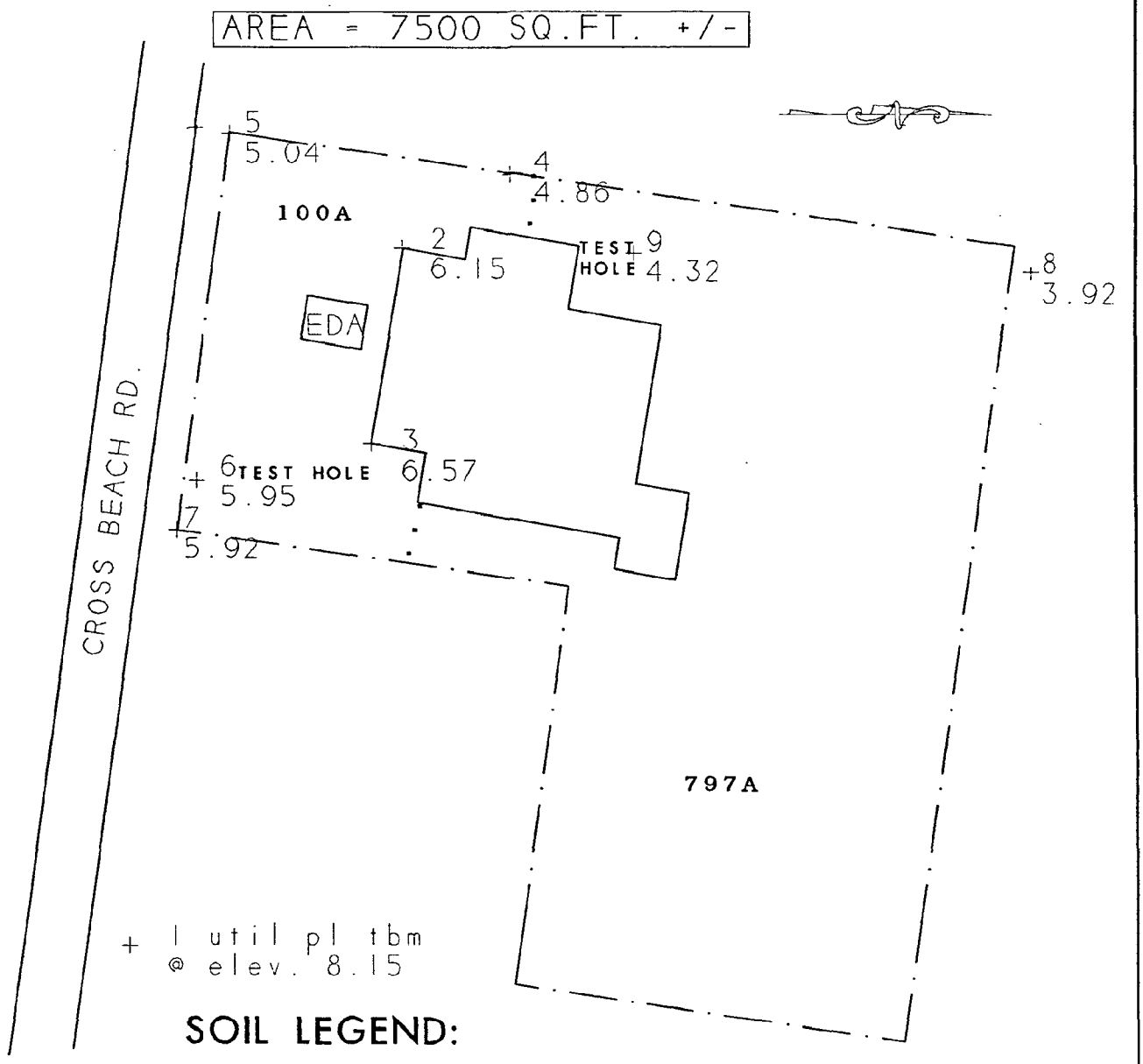
The front and easterly portion of this lot consists of soils consistent with the moderately well drained Deerfield Series. Typically observed was 7+/- inches of dark brown fine sandy loam over dark brown to dark yellowish brown sandy loam to a depth of about 22 inches. Strong brown loamy sand to sand was observed from about 22 to 36 inches. Yellowish brown sands were observed generally below 36 inches with dark yellowish brown and dark grayish brown mottles noted.

The house and effluent disposal area are not part of this unit. About 6000 square feet of the area within this lot are consistent with this unit.

915 C, Unnamed Aquic Udipsamment

The back portion of this residential lot has been excavated and filled to create a backyard. Most profiles showed sandy fill over what appeared to be Deerfield profiles. Some profiles were in areas excavated but the soils also remained moderately well drained.

Steeper sloped areas comprise less than 10% of a 6700+/- square foot area within this unit.



SOIL LEGEND:

SOIL UNIT BOUNDARY	. . . . .
SOIL MAP UNIT (TYP.)	300 A
PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY	— . —

ORDER 1 SOIL MAP

SCALE 1" = 20'

PREPARED BY :
DAVID J. ALLAIN, CSS #13

OWNER: BOBOLA, F
MAP# 25 LOT# 3
ADDRESS: 8 CROSS BEACH RD.
OCTOBER, 1994

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357
ENGINEERING PERMITTING CONSULTING

MAP UNIT DESRIPTIONS for #8 Cross Beach Road

100 A, Udorthents, wet substratum

Observed within this unit was about 16 inches of compacted loamy fill over loose, very dark gray sands to about 36", and below 36" were dark gray loose sands. The area contains the effluent disposal area of unknown size. No mottling was noted above the chroma 1 sands, and the fill would appear to be marginally moderately well drained.

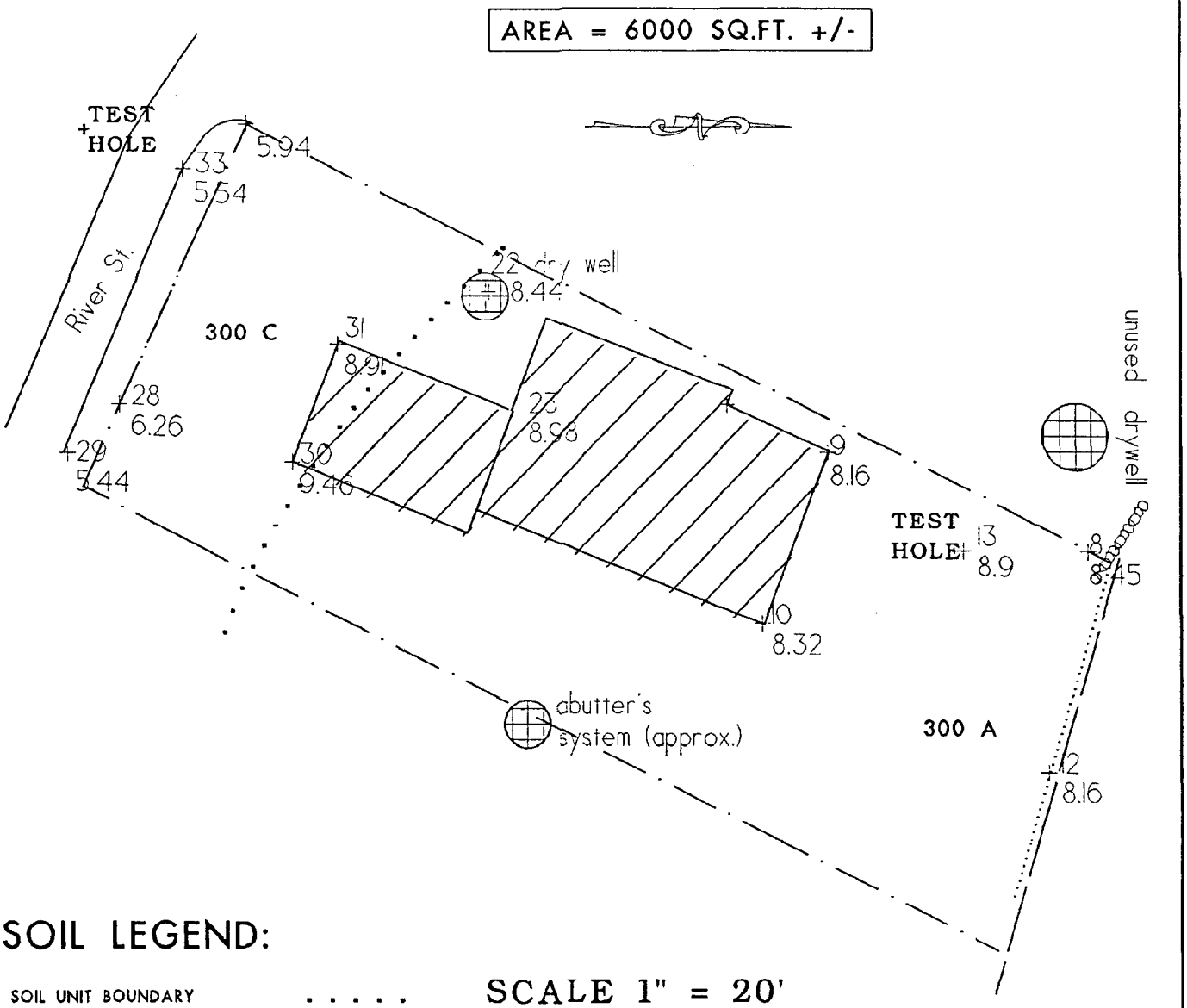
797 A, Matunuck

This soil occupies a portion of the tidal marsh subject to flooding at high tide.

Typically observed was organic root matter to a depth of about 5 inches over dark gray loose sands with oxidized rhizospheres noted to 18". Below 18" grayish brown sands were noted. Saturation and live soils limited observations to about 30". Hydrogen sulfide odor noted.

Soils observed were poorly drained.

This unit occupies about 5700 square feet of this lot.



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY ——— . ———

SCALE 1" = 20'

ORDER 1 SOIL MAP

OWNER: HOPKINSON, C. & V.
MAP# 23 LOT# 14
ADDRESS: 14 RIVER ST.

OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357
ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 14 River Street

300 A, Udipsamments, nearly level

This unit represents excessively drained sands consisting of excavated and regraded eolian deposits.

Typical profiles consisted of 8 to 24 inches of dark, yellowish-brown to pale brown loamy sand to sand fill over light brownish-gray loose sands to 50+ inches.

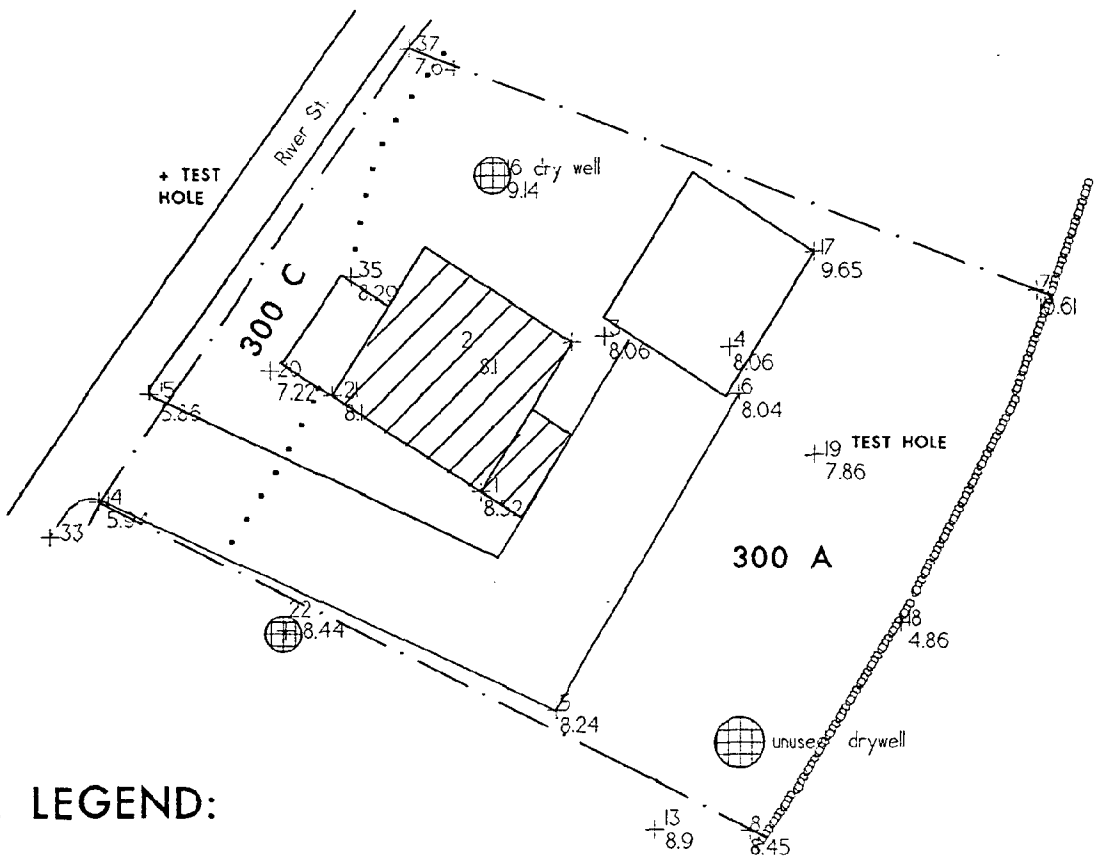
The home and effluent disposal areas are located within this 5,400 square foot soil unit, but are not part of this soil unit.

300 C, Udipsamments, nearly level

The description of this unit is the same as 300 A, except for slopes ranging from 8 to 15 %.

Less than 10% of this unit consists of the same unit with B slopes.

AREA = 12,000 SQ.FT. +/-



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIMIT OF SOIL SURVEY — . —

SCALE 1" = 30'

ORDER 1 SOIL MAP

OWNER: PIKE, R. & V. RAWNSLEY
MAP# 23 LOT# 15
ADDRESS: 15 RIVER ST.
OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2. 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357
ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 15 River Street

300 A, Udipsamments, nearly level

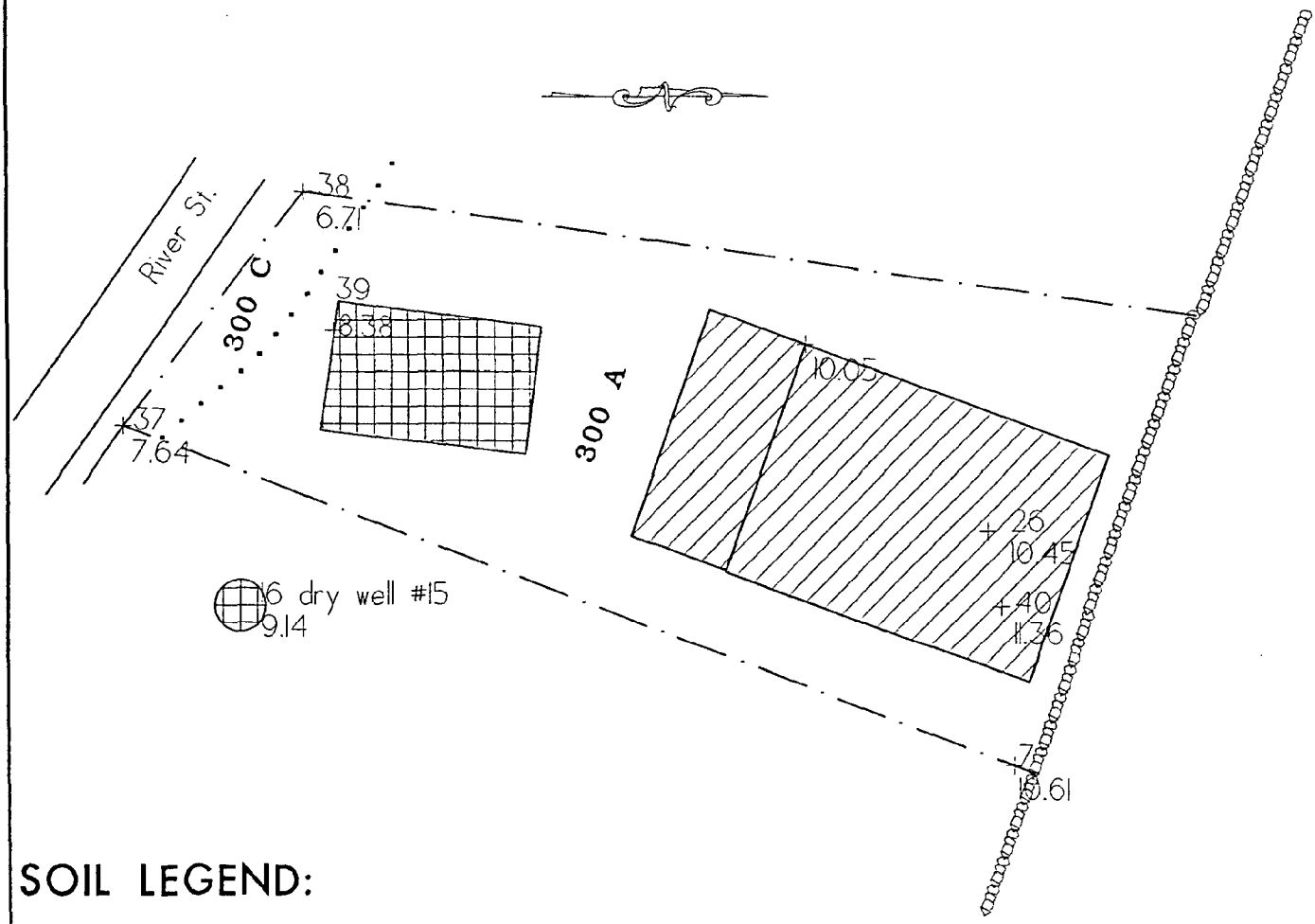
This unit is adjacent to and the same as the 300 A unit described for lot 14 River Road. The soils are excessively drained regraded/filled eolian deposits.

The area covered by this unit is approximately 10,800 square feet in size. The home and garage are within this soil unit, however are not part of it.

300 C, Udipsamments, nearly level

This unit represents about 1200 square feet of soils which have the same description as the 300 A soils noted, except for steeper 8 to 15% slopes. Within this area is a small garden area with an A slope.

AREA = 5,000 SQ.FT. +/-



SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY — . —

SCALE 1" = 20'

ORDER 1 SOIL MAP

OWNER: CAMACHO, H. & A.
MAP# 23 LOT# 15-1
ADDRESS: 15A RIVER ST.
OCTOBER, 1994

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ELKIND ENVIRONMENTAL ASSOCIATES, INC.
EEA
6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357
ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 15A River Road

300 A, Udipsamments, nearly level

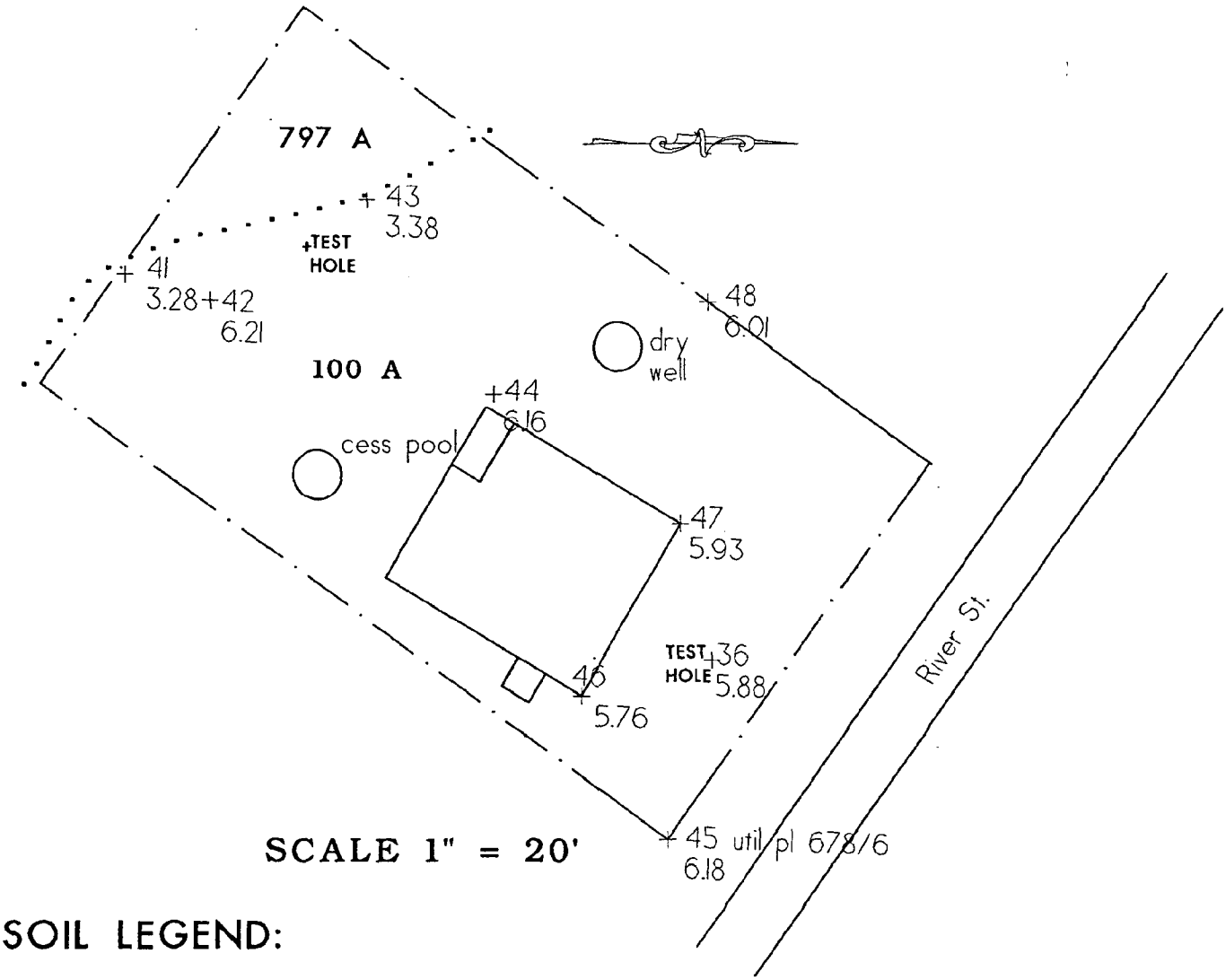
The soils on this lot are excessively drained regraded/filled eolian deposits. Typical profiles are as described for 14 River Road.

The building and effluent septic area cover about 35% or 1780 square feet of this 5000+/- square foot lot. About 3000 square feet of this lot fits the 300 A description.

300 C, Udipsamments, nearly level

The unit covers about 250 square feet of area. It has the same description as 300 A, but has an 8 to 15% slope.

AREA = 5.000 SQ.FT. +/-



SCALE 1" = 20'

SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIIMIT OF SOIL SURVEY ___ . ___

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ORDER 1 SOIL MAP

OWNER: BECKMAN, N.
MAP# 23 LOT# 33
ADDRESS: 33 RIVER ST.
OCTOBER, 1994

ELKIND ENVIRONMENTAL ASSOCIATES, INC.

EEA

6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-6357

ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 33 River Street

100 A, Udorthents, wet substratum

This unit represents the soils on a lot that has had soil fill placed over poorly drained tidal soils. The fill soils are marginally moderately well drained.

Typically found was sandy loam fill to a depth of about 17 inches. Loose mottled brown sands to gravelly sandy loam fill extended to a depth of about 28 inches. Found at a depth of 28 to 32 inches was clam shell, etc. debris. Below this debris, the soils observed were dark gray loose sands with black and dark yellowish brown mottles noted.

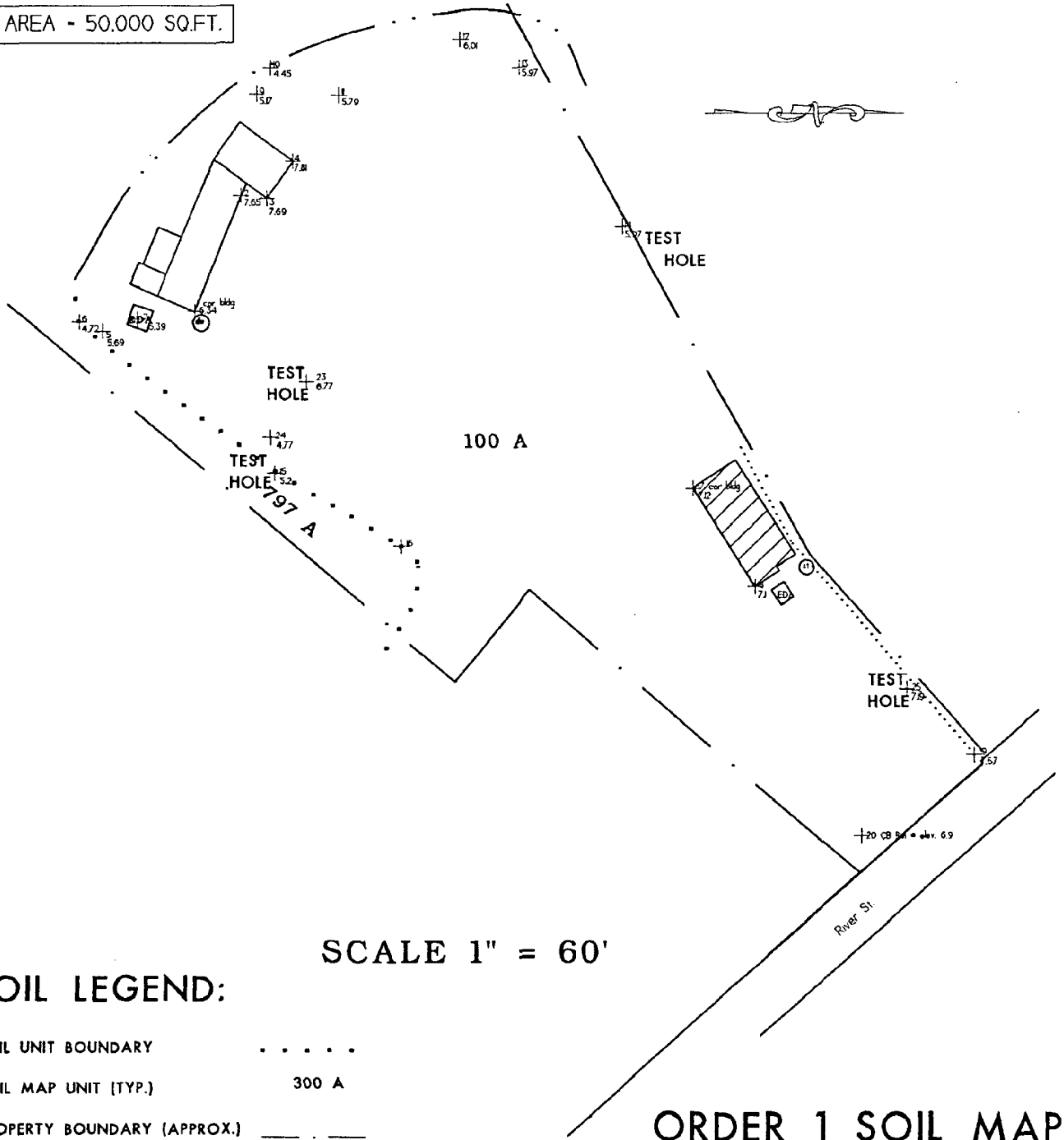
This unit covers about 3800 square feet , exclusive of building and effluent disposal areas.

797 A, Matunuck

This soil occupies a portion of the tidal marsh, subject to flooding at high tide. The area mapped occupies about 500 square feet of the lot.

Typically observed were 12 inches of organic fibers with a low percentage of fines over dark gray sands, saturated and loose to 40+ inches. These soils are very poorly drained. Hydrogen sulfide odor noted.

AREA - 50,000 SQ.FT.



SCALE 1" = 60'

SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIMIT OF SOIL SURVEY ___ . ___

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ORDER 1 SOIL MAP

OWNER: EASTMAN, C.
MAP# 23 LOT# 48-1
ADDRESS: 48A RIVER ST.
OCTOBER, 1994

ELKIND ENVIRONMENTAL ASSOCIATES, INC.

EEA

6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357

ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 48 A River Street

100 A, Udorthents, wet substratum

This lot was created by placing fill over wetlands. The depth of fill varies from about 30 to 40 inches and appears to be moderately well drained.

The unit represents about 47,000 square feet of the lot's area. The buildings and effluent disposal areas are excluded.

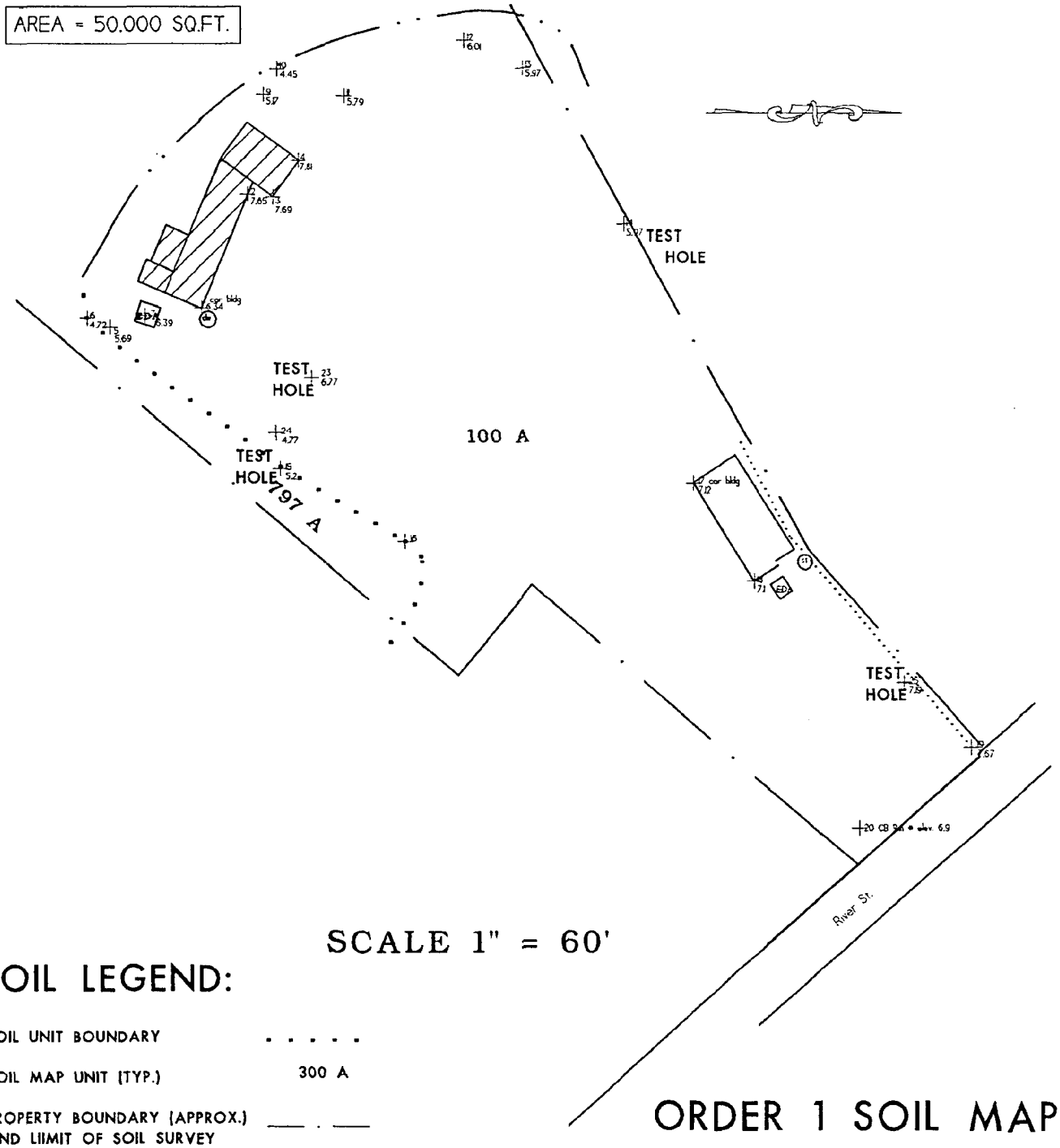
Typically found within this unit was 30 to 40 inches of granular fill with gray and dark reddish brown mottling noted at about 20 inches in most profiles. Below this fill was black, saturated loamy sand to 40+ inches. Augering below 42 inches was not possible because of saturation and constant caving.

797 A, Matunuck

This soil occupies a portion of the tidal marsh subject to flooding at high tide.

Typically observed was 6 inches of organic root matter in varying stages of decomposition , over 40+ inches of dark gray sands. Hydrogen sulfide odor noted. Soils were saturated.

These soils were poorly drained and occupy about 3000 square feet of the lot area.



SCALE 1" = 60'

SOIL LEGEND:

SOIL UNIT BOUNDARY . . . . .

SOIL MAP UNIT (TYP.) 300 A

PROPERTY BOUNDARY (APPROX.) AND LIMIT OF SOIL SURVEY ___ . ___

PREPARED BY :
DAVID J. ALLAIN, CSS #13

USING "ORDER 1 SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE SSSNE PUBLICATION #2, 1993"

THIS MAP PRODUCT IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT PRODUCED BY A PRIVATE SOIL CONSULTANT AND IS NOT A PRODUCT OF THE USDA SOIL CONSERVATION SERVICE

ORDER 1 SOIL MAP

OWNER: EASTMAN, C.
MAP# 23 LOT# 48-3
ADDRESS: 48C RIVER ST.
OCTOBER, 1994

ELKIND ENVIRONMENTAL ASSOCIATES, INC.

EEA

6 BAYMEADOW DR.
NASHUA, NEW HAMPSHIRE 03063
(603) 889-4357

ENGINEERING PERMITTING CONSULTING

MAP UNIT DESCRIPTIONS for 48 C River Street

100 A, Udorthents, wet substratum

This lot was created by placing fill over wetlands. The depth of fill varies from about 30 to 40 inches and appears to be moderately well drained.

The unit represents about 47,000 square feet of the lot's area. The buildings and effluent disposal areas are excluded.

Typically found within this unit was 30 to 40 inches of granular fill with gray and dark reddish brown mottling noted at about 20 inches in most profiles. Below this fill was black, saturated loamy sand to 40+ inches. Augering below 42 inches was not possible because of saturation and constant caving.

797 A, Matunuck

This soil occupies a portion of the tidal marsh subject to flooding at high tide.

Typically observed was 6 inches of organic root matter in varying stages of decomposition , over 40+ inches of dark gray sands. Hydrogen sulfide odor noted. Soils were saturated.

These soils were poorly drained and occupy about 3000 square feet of the lot area.

MAP UNIT DESCRIPTIONS for ELEMENTARY SCHOOL at 256 WALTON ROAD

26 A, Windsor, loamy sand, 0-3% slope

An area of about 25,000 square feet located along the western boundary of the property was found to contain the excessively drained glaciofluvial deposits typical of this unit. The area had a few trees.

Typically found in test holes dug was 0-7" of dark brown sandy loam over another 7" of brown loamy sand. Loose brownish yellow brown fine to medium sands extended to a depth of about 32 inches from the surface. Light yellowish brown, loose, single grained fine to medium sands were found to a depth of greater than 40 inches below the surface.

The area shown appeared to be completely consistent with the 26 A description.

300 A, Udipsamment, nearly level

The soils within this unit are regraded, filled excessively drained soils. The profiles observed within this unit show variable surface layer of 6 to 12 inches of dark grayish brown to dark brown sandy loam. A B horizon was present in some and absent in other profiles observed. When present, it would range from dark yellowish brown loamy fine sand to sand, granular to single grained and very friable to loose. The subsoil was found to be loose, single grained yellowish brown to pale brown fine sands.

The entire unit covers about 10 acres. Excluded from within this unit are about 3 acres of buildings, paving and effluent disposal areas.

Narrow, steeper sloped Udipsamments occupy less than 5% of this unit's southerly and northeasterly margins.

The unit slopes down towards the tidal marsh in a northeasterly to southeasterly direction.

313 A, Deerfield

This unit includes 4+ acres of level athletic fields. Some leveling has occurred,

however, the profiles examined consistently demonstrate an Aquic Udipsamments or Deerfield.

These soils are slightly lower on the landscape than the typic Udipsamments and are moderately well drained glaciofluvial deposits.

Typically observed was that the surface layer had 6 inches of dark brown sandy loam. The subsoil was brownish yellow to yellowish brown loamy sand to fine sand. The depth to the C horizon started from 18 to 22 inches below the surface and was composed of light yellowish brown to brown loose single grained fine sands. Ground water was observed as shallow as 36 inches from the surface. Distinct mottles were observed within the C horizon.

Areas along the margin of this unit had steeper slopes, representing less than 5% of this unit and the limit of mapping.

313 B, Deerfield

The description of this unit's soil profile is the same as the 313 A unit.

This unit occupies about 1/2 acre near the base of the 300 A unit fill slope south of the school building.

The unit is composed of moderately well drained glaciofluvial deposits. About 10% of this unit is occupied by debris overfill.

546 B, Walpole

Only the upper portion of this poorly drained glacial outwash unit was observed and is shown so that the lower limit of the 313 B Deerfield unit is represented. The soils to the south and within about twenty feet of the 313 B and 546 B boundary shown are representative of the unit. Beyond about 20 feet the unit composition was not determined.

Typically found within this unit was a surface horizon to about 7 inches of very dark gray sandy loam. Oxidized rhizospheres were noted. A mottled very dark grayish brown sandy loam was then observed to a depth of 18 inches. Below this level, brown loamy sands were observed with dark grayish brown and dark yellowish brown mottles.